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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/841,536	04/24/2001	Sanjay Agarwal		5909

7590
02/20/2004
Sanjay Agarwal
CHIPSOL, Inc.
4702 Cheeney St.
Santa Clara, CA 95054

EXAMINER

PAN, DANIEL H

ART UNIT	PAPER NUMBER
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2183

DATE MAILED: 02/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/841,536

Applicant(s)

AGARWAL ET AL.

Examiner

Art Unit

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2</u> . | 6) <input type="checkbox"/> Other: _____ |

1. Clams 1-3 are presented for examination.

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

2. Claim 3 recites the limitation "the math computation" in last line. There is insufficient antecedent basis for this limitation in the claim. It is not sure whether the applicant is introducing a math computation or not. No other math computation can be found in the claim. Suggestion : replace "the" by "a".

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1 rejected under 35 U.S.C. 102(e) as being anticipated by Hong (6,421,698).

As to claim 1, Hong disclosed a system for controlling processors (see processing units in fig.1) using synchronous logic design to achieve digital signal processing (see the pixel processing or the motion estimation and the cooperative operations in col.4, lines 30-41) comprising steps Of :

- a) implementing signed two's complement multiplication (e.g. see col.7, lines 12-24, see also col.7, lines 60-66);
- b) implementing divide function (e.g. see the divided by two value in col.8 lines 6-13);
- c) implementing a left shift and right shift (e.g. see the left or the right in col.8, lines 19-22, see also col.16, lines 49-59, see explanation below);
- d) normalizing function (e.g. see the NORM in col.16, line 51).

4. AS to the claimed language "shift left and shift right", it is interpreted as the capability of implementing either shift left or right because it would be impossible to shift the data bit left **and** right at the same time; it would be unworkable. Therefore, the meaning of the claimed language is being treated as a system capable of implementing either left shift or right shift. And, Hong did disclosed this capability of shift left "and " shift right functions (see col.8, lines19-22). And , it is for the above reasons the claim is found anticipated by Hong. Applicant is welcome to provide feedback in the next response to clarify the issue.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 2 is rejected under 35 U.S.C. 102(a) (b) as being anticipated by Shackleford et al. (5,896,521).

6. As to claim 2, Shackleford disclosed a coprocessor system using a register file as an interface for selecting a desired math computation (see the selection of the ALU operation output in col., see also the feedback path of the register file with the ALU, register file selector 242 is viewed as functional port of refitted file and the shifter 240 is the output port of ALU in fig.5).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 3 is rejected under 35 U.S.C. 102(a) (b) as being anticipated by Miyamori et al. (5,687,105).

8. As to claim 3, Miyamori disclosed at least a coprocessor (DSP) using source data dependency (m) to compute the time of duration required to perform a computation [multiply and add] (see fig.5, see the $m+k$ overall clock cycles in col.7, lines 32-42, see also how the adder [23] dependent from m clock from 6d and output result from multiplier 22 in col.6, lines 56-62).

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Kartalopoulos (5,590,323) is cited for showing the basic teaching of the time taken for a computational task (e.g. see col.1, lines 25-30 for background, see col.6, lines 15-30);

b) Ohsawa et al. (5,625,832) is cited for showing the teaching of the arithmetic calculations executed during a time frame (e.g. see figs.9,a,b, col.20, lines 42-56);

c) Uematsu (6,009,262) is cited for showing the total processing time based on the computation time and wait time to complete the computation time (e.g. see col.8, lines 36-56);

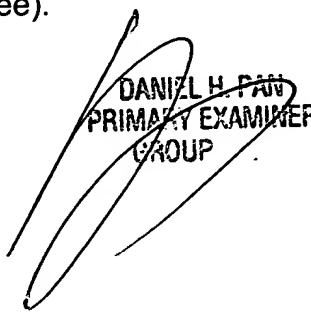
d) Kuroda et al. (4,722,068) is cited for the teaching of the register file with extended sign bit of 2's complement multiplication (e.g. see col.2, lines 51-68, col.3, lines 1-24, see also col.3, lines 30-67).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Pan whose telephone number is 703 305 9696. The examiner can normally be reached on M-F from 8:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chan, can be reached on 703 305 9712. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



DANIEL H. PAN
PRIMARY EXAMINER
GROUP